

CLAIMS

1 1. A system for tracking the location of a shipping container via communication
2 with a satellite and a central server comprising:
3 a central server;
4 a portable detachable tracking unit comprising:
5 an antenna that is capable of communication with both a GPS satellite and a
6 two-way satellite;
7 a processing device;
8 a GPS receiver for receiving signals from the GPS satellite;
9 a transmitter for transmitting information to the central server via the two-way
10 satellite;
11 a modem;
12 a housing; and
13 means for attaching and detaching the tracking unit to the shipping container.

1 2. The system of claim 1, in which the tracking unit has detecting means for
2 detecting when it has been detached from a shipping container and communicating that
3 information via the two-way satellite to the central server.

1 3. The system of claim 1, in which the tracking unit has detecting means for
2 detecting when it has been tampered with and communicating that information via the two-
3 way satellite to the central server.

1 4. The system of claim 1, in which the tracking unit also has a receiver for
2 receiving communications from the two-way satellite.

1 5. The system of claim 1, in which the tracking unit further includes an internal
2 power supply.

1 6. The system of claim 5, in which the internal power supply of the tracking unit
2 is provided by one of a fuel cell and battery.

1 7. The system of claim 1, in which the tracking unit has a memory capable of
2 receiving and storing geo-fencing information on the specified route to its destination and the
3 processing device is programmed to determine if the tracking unit is outside of the geo-fence
4 and to communicate that information to the central server via the two-way satellite.

1 8. The system of claim 1, in which the shipping container has at least one door
2 and at least one locking bar for locking all doors with the tracking unit being attached to the
3 locking bars so that the locking bars can not be unlocked without first detaching the tracking
4 unit.

1 9. The system of claim 1, in which the shipping container has at least one door
2 and at least one locking bar for locking all doors with the tracking unit being attached to the
3 locking bars by least one clamp that clamps around a locking bar that prevents the tracking
4 unit from moving up and down on the bar and the tracking unit is also directly attached to the
5 shipping container so that the bars can not be moved to unlock the doors without detaching
6 the tracking unit.

1 10. The system of claim 8, in which the tracking unit is attached to at least one
2 locking bar by a special fastener that can not be released without using a special tool.

1 11. The system of claim 1, in which the antenna in the tracking unit is located in
2 the vertical position in relation to the surface of the earth in order to better transmit and
3 receive communications.

1 12. A portable detachable tracking unit for transmitting its location via
2 communication with a satellite to a central server, said tracking unit being capable of being
3 attached and detached from a shipping container, said tracking unit comprising:
4 an antenna that is capable of communication with both a GPS satellite and a
5 two-way satellite;
6 a processing device;
7 a GPS receiver for receiving signals from the GPS satellite;
8 a transmitter for transmitting information to the central server via the two-way
9 satellite;
10 a modem;
11 a housing; and
12 means for attaching and detaching the tracking unit to a shipping container.

1 13. The portable detachable tracking unit of claim 12, which has detecting means
2 for detecting when it has been detached from a shipping container and communicating that
3 information via the two-way satellite to a central server.

1 14. The portable detachable tracking unit of claim 12, which has detecting means
2 for detecting when it has been tampered with and communicating that information via the
3 two-way satellite to a central server.

1 15. The portable detachable tracking unit of claim 12, in which the tracking unit
2 also has a receiver for receiving communications from a two-way satellite.

1 16. The portable detachable tracking unit of claim 12, in which the tracking unit
2 has an internal power supply.

1 17. The portable detachable tracking unit of claim 16, in which the internal power
2 supply of the tracking unit is provided by one of a fuel cell and battery.

1 18. The portable detachable tracking unit of claim 12, in which the tracking unit
2 has a memory capable of receiving and storing geo-fencing information on the specified route
3 to its destination and the processing device is programmed to determine if the tracking unit is
4 outside of the geo-fence to and communicating that information to the central server via the
5 two-way satellite.

1 19. The portable detachable tracking unit of claim 12, in which the antenna is
2 located in the vertical position in relation to the surface of the earth in order to better transmit
3 and receive communications.

1 20. The portable detachable tracking unit of claim 12, in which a cushioning
2 material is placed between the back of the tracking unit and a door of the shipping container.

1 21. A shipping container with at least one door and at least one locking bar for
2 locking all doors and a portable detachable tracking unit, said tracking unit comprising:
3 an antenna that is capable of communication with both a GPS satellite and a
4 two-way satellite;
5 a processing device;
6 a GPS receiver for receiving signals from the GPS satellite;
7 a transmitter for transmitting information to a central server via the two-way
8 satellite;
9 a modem;
10 a housing; and
11 means for attaching said tracking unit to the locking bars so that the locking
12 bars can not be unlocked without first detaching the tracking unit.

1 22. A shipping container with at least one door with a built-in tracking unit for
2 transmitting its location via communication with a satellite and a central server, said tracking
3 unit comprising:

4 an antenna that is capable of communication with both a GPS satellite and a
5 two-way satellite;

6 a processing device;

7 a GPS receiver for receiving signals from the GPS satellite;

8 a transmitter for transmitting information to a central server via the two-way
9 satellite;

10 a modem; and

11 means for determining when a door of the shipping container is open and

12 means for communicating that information via the two-way satellite to the central server.

1 23. The shipping container and built -in tracking unit of claim 21 in which there
2 are also means for determining when the tracking unit has been tampered with and means for
3 communicating that information via the two-way satellite to the central server.

1 24. The portable detachable tracking unit of claim 12, in which the tracking unit
2 further includes a battery that powers those components which need to be on to receive
3 messages from the central server via the two-way satellite and to power a clock and to turn
4 other electrical components on that are powered by another source of power, and a fuel cell
5 that powers all components not powered by the battery.

1 25. A method of monitoring a shipping container during shipping from a shipping
2 point to a destination via a portable detachable tracking unit, at least one satellite and central
3 server, comprising:

4 associating the shipping container with the portable tracking unit attached to
5 the container in the central server;

6 the tracking unit determining whether certain events have occurred or not on
7 one of the shipping container and the portable detachable tracking unit or both, the tracking
8 unit transmitting that information to the central server via the satellite; the tracking unit
9 periodically determining its location via GPS satellites and transmitting that information to
10 the central server via the satellite;

11 determining whether the tracking unit is on course to its destination based
12 upon this transmitted information according to a predetermined route or not; and

13 generating a message concerning whether the tracking unit is on course or not
14 and whether the certain event has occurred or not.

1 26. The method of claim 25, in which the certain event is that the tracking unit has
2 just went off course.

1 27. The method of claim 25, in which the certain event is that the tracking unit has
2 been detached from the shipping container.

1 28. The method of claim 25, in which the certain event is that the tracking unit has
2 been tampered with.

1 29. A portable detachable tracking unit for transmitting its location via
2 communication with a satellite to a central server, said tracking unit being capable of being
3 attached and detached from a shipping container, said tracking unit comprising:
4 an antenna that is capable of communication with both a GPS satellite and a
5 two-way satellite;
6 electronic means for receiving communications from the GPS satellite;
7 electronic means for communicating with at least one two-way communication
8 satellite;
9 said electronic components being placed by an internal power source; and
10 all of said components being housed in a housing that has means for attaching
11 and detaching to a shipping container.

1 30. The portable detachable tracking unit of claim 29, which has means for
2 showing the unauthorized detachment from a shipping container.

1 31. The portable detachable tracking unit of claim 29, which has means to shut
2 down part of the electronic components and waking them up upon the occurrence of certain
3 events or a command received from the central server.

1 32. The portable detachable tracking unit of claim 29, which has means to connect
2 to a nearby computer with access to the tracking unit being programmed to only grant access
3 pursuant to a secret code, said tracking unit being capable of being programmed by the nearby
4 computer to carry out certain functions and to transmit certain information.

1 33. The portable detachable tracking unit of claim 29, in which a cushioning
2 material is placed between the back of the tracking unit and a door of the shipping container.